

$$3^x \cdot 5^{(x^2)} = 15$$

$$x = ?$$



----- Q U E S T I O N -----

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----- R É P O N S E -----

$$3^x \cdot 5^{(x^2)} = 15$$

$$\log[5](3) = 0,68260$$

$$\log[5](15) = 1,68260$$

$$(5^{0,68260})^x \cdot 5^{(x^2)} = 5^{1,68260}$$

$$5^{(0,68260x)} \cdot 5^{(x^2)} = 5^{1,68260}$$

rappel: si  $m^a = m^b \cdot m^c$  alors  $a = b + c$  (exemple:  $3^2 \cdot 3^3 = 9 \cdot 27 = 3^5 = 243$ )

même base (= 5), donc:

$$0,68260x + x^2 = 1,68260$$

$$x^2 + 0,68260x - 1,68260 = 0$$

$$\Delta = 0,68260^2 - 4 \cdot 1 \cdot -1,68260 = 7,19634$$

$$\sqrt{\Delta} = \sqrt{7,19634} = +2,6826 \text{ et } -2,68260$$

- cas  $\sqrt{\Delta} = +2,68260$ :  $x = (-0,68260 + 2,68260)/2 \cdot 1 = 2/2 = 1$

- cas  $\sqrt{\Delta} = -2,68260$ :  $x = (-0,68260 - 2,68260)/2 \cdot 1 = -3,36520/2 = -1,68260$

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| x = 1 |  
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| x = -1,68260 |  
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